Manitoba

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Agriculture

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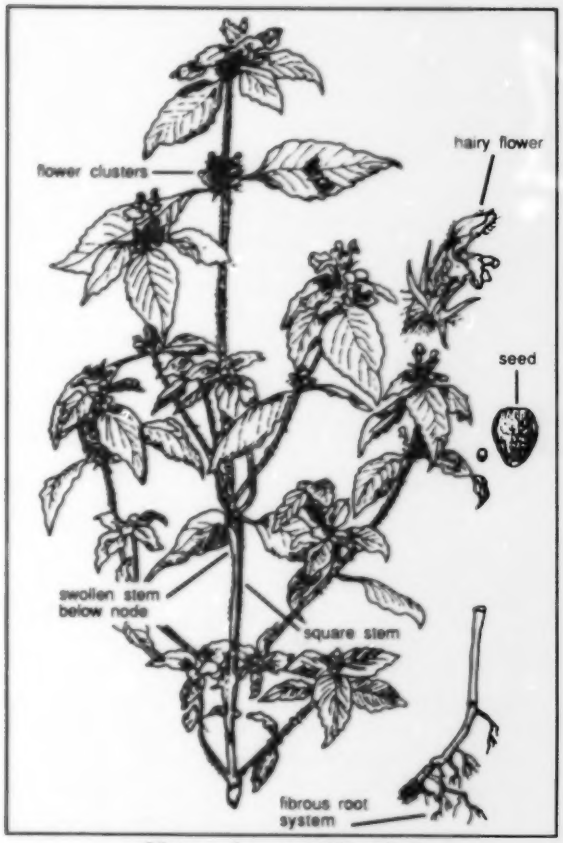
Weed Facts

How to Control Hemp-Nettle



Mature hemp-nettle plant

A Serious Problem

Hemp-nettle is an increasingly troublesome annual weed plaguing Manitoba's agriculture industry. It was first sighted at Delta, near the south end of Lake Manitoba, in 1921. Hemp-nettle infestations are now found scattered throughout the province, but are especially common in the eastern areas of Manitoba and in the regions north of Riding Mountain.

Identification

At the seedling stage, hemp-nettle can be identified by the distinctly-notched cotyledons. Hemp-nettle grows erect, reaching 30 to 75 cm (one to 2 1/2 feet) in height. The stems are square in shape, with bristly hairs that are particularly numerous below the nodes. They often have a prevalent swelling just below the nodes, too.

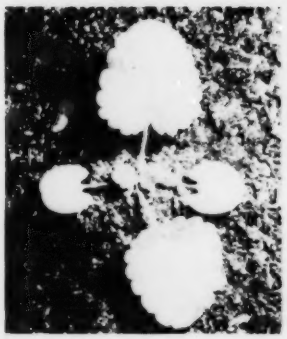
The leaves are opposite each other, stalked, hairy, wedged-shaped, or rounded at the base, and coarsely toothed.

The hairy, pale, purple-colored flowers are found in dense clusters in the axils of the upper leaves. Flowering occurs from July to September.

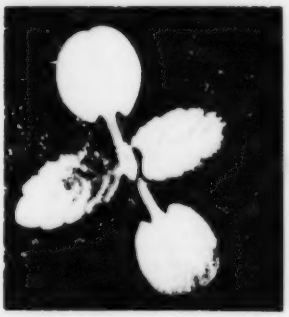
The seed is abut 3 mm (1/8 inch) long, somewhat egg-shaped, with a prominent round scar at the base. It is grayish brown, with darker colored spots. Hemp-nettle spreads by seeds.

Plant Confusion

American dragonhead is often confused with hemp-nettle. However, American dragonhead's cotyledons are rounded, not notched, and have backward pointing projections. The lower two-thirds of its first true leaves are round-toothed. American dragonhead, unlike hemp-nettle, forms a rosette. It is a biennial, while hemp-nettle is an annual.



American dragonhead



Hemp-nettle seedling

Habitat

If soil moisture is high, hemp-nettle can grow to be a robust weed. The table on the next page shows how, in one experiment, hemp-nettle gained triple the weight under high soil moisture compared to low and medium moisture. This illustrates why hemp-nettle is such a big problem in the moister areas of Manitoba.

Influence of Soil Moisture on Growth of Hemp-Nettle			
	Soil Moisture Regime		
Growth Parameter	High	Medium	Low
Height (cm)	45.0	35.0	20.0
Dry weight (g)	11.4	4.0	0.6
Leaf area (cm2)	768.0	225.0	68.0
No. of flower clusters	32.0	8.0	6.0

Results at 65 days after planting. Plants were grown in pots at a day/night temperature of 23°/15°C, with a 16-hour daylength (O'Donovan and Sharma, 1987).

Competitiveness

Hemp-nettle can reduce yields of field crops dramatically, especially when it is present at high densities. The table at the bottom of this page gives some examples of yield losses noted in experiments.

Prevention

Preventing hemp-nettle from gaining a foothold on your farm is the best control method. You should pay attention to good sanitation in the following areas:

- Use certified seed. Ask for a seed analysis to determine if the seed you plan to purchase contains hemp-nettle.
- Avoid bringing in forage infested with hemp-nettle. If you are using feed that is contaminated with hemp-nettle, take care to watch areas where feed and manure are handled. Watch for and destroy any hemp-nettle plants that begin growing.
- Clean all equipment used in infested areas — including seeding, tillage or harvesting equipment.

Cultural Control

- **Summerfallow**

  Summerfallow is effective in reducing a hemp-nettle population, but it is ***economically impractical.***

  If you choose to summerfallow, you can grow out and destroy one or two flushes of weeds with tillage. However, you must minimize transplanting seedlings by avoiding tillage of moist soil at a shallow depth. Instead, till on a warm, sunny and dry day in order to dry out and kill plant roots.

  Be aware of the potential for soil erosion when practicing summerfallow!

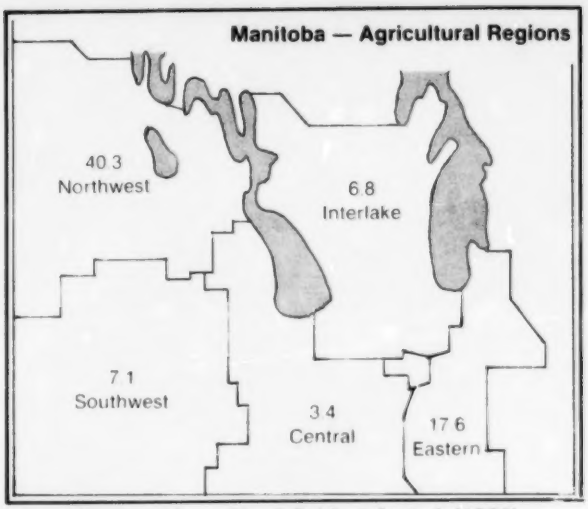
- **Mowing**

  For effective hemp-nettle control, mow below or as close to the growing point as possible before seed is produced. Re-growth may occur if parts of branches and leaf area are left, and if growing conditions are good. In this case, another mowing may be necessary.

- **Crop Selection**

  Select a competitive crop that will compete with hemp-nettle early in the season. Barley, canola, spring rye, oats and wheat are the most effective competitors. Flax is not a good competitor.

  Row crops are generally considered poor competitors. Inter-row cultivation will control hemp-nettle, but once the crop becomes too tall to cultivate, the hemp-nettle continues to germinate and compete with the crop.



Hemp-nettle – % of fields infested (1986)

Yield Losses Due to Hemp-Nettle Competition			
Crop	Location (yr)	Hemp-Nettle Density (plants/m2)	Yield Loss
Wheat (Park)	Lacombe, AB (79)	398	36%
Wheat (Neepawa)	Lacombe, AB (88)	175	22%
Wheat (Oslo)	Swan River, MB (88)	590	67%
Canola (Tobin)	Lacombe, AB (83)	130	25%
Oats	Quebec (82)	400	30%
Alfalfa	Quebec (82)	400	85%

Compiled by Friesen, University of Manitoba

Perennial forages or tame pastures are effective in reducing hemp-nettle, providing good control is used in the crop seedling year. Once the crop is established, mowing will suppress the weed. When breaking up the forage stand, the first year is critical because reinfestation can occur if control is neglected.

- **Fertility**

  Adequate fertility improves weed control by increasing crop vigour and competitiveness. Good crop growth also will suppress later emerging weeds which germinate after spraying.

  For maximum crop growth and competitiveness, apply the required amount of fertilizer as determined by a soil test.

  To obtain efficient use of phosphate fertilizer, you should side band or place it in the seed row. If you broadcast, you are giving both crop and weeds an equal chance to use the fertilizer, thereby reducing the crop's competitive advantage.

Chemical Control

Either soil-applied (pre-plant incorporated) or foliar-applied (post-emergence) herbicides may be used for hemp-nettle control.

A list of recommended treatments is given in the following chart. Application instructions for hemp-nettle herbicides can be found in the *Guide to Chemical Weed Control.* You should always consult this book **and** the product label before any herbicide application.

It should be noted that foliar-applied herbicides for hemp-nettle are difficult to time because the weed emerges in flushes through the spring. Thus, if herbicides are applied to control the first flushes, subsequent flushes will escape. On the other hand, if spraying is delayed until several flushes of the weed emerge, the seedlings which emerged early may be too big to control or may have already inflicted yield loss on the crop. However, it is best to spray the early-emerging weeds because they compete the most with the crop. Subsequent weed flushes will probably be out-competed by a vigorously-growing crop.

Products Recomended for Hemp-Nettle Control in Fields Crops

Consult your Guide to Chemical Weed Control for application instructions for herbicides recommended in this chart.

Crop	Treatment	Timing	Rating*
Wheat, Barley,Oats	Afolan/Linuron/Lorox + MCPA	post	Fair
	Banvel + MCPAK	post	Fair
	Blagal	post	Fair
	Buctril M + MCPAK	post	Poor
	DyVel	post	Fair
	Lexone/Sencor	post	Fair
	MCPAK	post	Poor
	Pardner + MCPAK	post	Poor
	Refine	post	Excellent
	Target	post	Poor
Hard Red Spring Wheat Only	Triumph Plus	post	Excellent
Triazine-tolerant Canola	Bladex L	post	Fair
	Edge	pre-	Good
	Sencor	post	Fair
Canola, Mustard	Edge	pre-	Good
Peas	Edge	pre-	Good
	Lexone/Sencor	post	Fair
Lentils	Sencor	post	Fair

* ***Ratings are based on the following:***

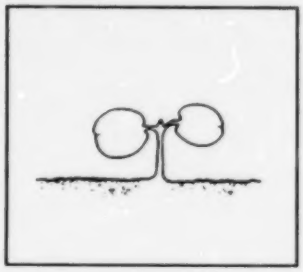
Excellent – High degree of control over most growing conditions; Good – Control is acceptable under most growing conditions; Fair – Control is variable, depending on growing conditions; Poor – May provide some suppression, but control is often unacceptable.

Post – Post-emergence or foliar-applied
Pre – Pre-plant incorporated or soil-applied

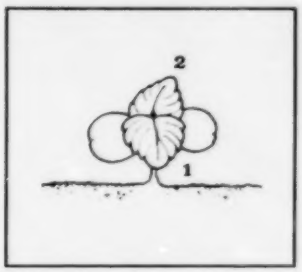
Hemp-Nettle Staging

It is important that you make your herbicide applications when hemp-nettle is in the recommended leaf stage outlined in the *Guide to Chemical Weed Control* **and** on the product label.

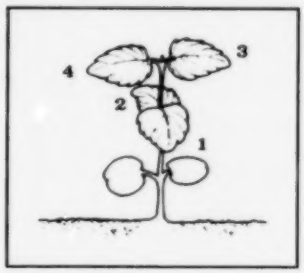
Hemp-nettle has "opposite leaves," meaning that it develops leaves in pairs. When counting leaf stages, be sure to count each pair of leaves as *two* leaves. The diagrams show hemp-nettle development in early leaf stages, and how to count the leaves.



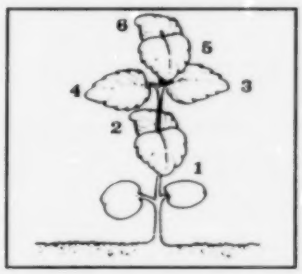
Cotyledon Stage



Two-Leaf Stage



Four-Leaf Stage



Six-Leaf Stage